



*Soules College of Business
School of Technology
Department of Technology*



TECH 4343 - ADVANCED MANUFACTURING PROCESSES

Course Syllabus

Course: TECH 4343
Title: Advanced Manufacturing Processes
Section: 001, 002
Pre-requisite: TECH 3311
Semester: Summer I 2026
Class Time: Mon. 6PM/ Tues 6PM
Class Location: COB 162 – For lab

Instructor: Ms. RaeJean Griffin
Office: COB 225.07
Phone: (903) 566-7211
Email: rgriffin@uttyler.edu
Preferred Method of Contact: Email
Office Hours: Virtual
(60% Lecture – 40% Lab)

Course Description

A survey of the latest manufacturing processes that are used in order to produce products that cannot be produced with conventional manufacturing processes. Processes covered will include, non-traditional machining methods, abrasive machining, advanced casting methods, specialized welding methods, and other high-end processes used in manufacturing industries.

Course Objectives:

1. Understand the various joining and separating processes used for fabricating parts.
2. Distinguish between a variety of casting processes for making certain products.
3. Determine the correct advanced manufacturing process for specific applications.
4. Examine the advantages and disadvantages of various advanced manufacturing processes.

Student Learning Outcomes:

At the end of this course, students will be able to:

1. Identify appropriate welding processes for a variety of materials and uses by successfully passing quizzes and exams with a 70% or better.
2. Calculate material removal rates for milling machines, lathes and drills.
3. Identify appropriate casting processes for manufacturing various items by successfully passing quizzes and exams with a 70% or better.
4. Identify nontraditional machining processes by successfully passing quizzes and exams with a 70% or better.
5. Determine and evaluate the most economic cutting process for various industrial materials and applications by passing quizzes and exams with a 70% or better.
6. Understand the nomenclature, processes, and equipment associated with sheet metal by successfully passing quizzes and exams with a 70% or better.

A copy of the lecture notes is required and can be downloaded off of Canvas from the course's site.

Textbook (Required)

J. Barry Duvall and David R. Hillis (2012). Manufacturing Processes: Materials, Productivity, and Lean Strategies (3rd ed.). Tinley Park, IL: Goodheart-Willcox. ISBN: 978-1-60525-569-9

Course Requirements

Daily Quizzes	200
Lab Project	300
Midterm exam	200
Assignments	200
<u>Final Exam</u>	<u>300</u>

TOTAL POINTS = 1200

*NOTE: This is NOT set in stone, pending the number of quizzes given, etc.

Grade Scale Breakdown:

A=90 - 100%
B=80 - 89%
C=70 - 79%
D=60 - 69%
F=BELOW 60%

Course Policies:

Content for examinations will be taken from lectures, demonstrations, reading assignments, laboratory exercises and any audio-visual materials used, i.e. films, tapes, slides, etc.

Make up examinations are the student's responsibility. **No excuses will be accepted after the exam is given.** The instructor must be notified **prior** to the scheduled exam. If not, the student forfeits his/her right to take the exam. Quizzes will not be made up unless a **prior acceptable excuse for an absence has been received by the instructor.**

Late Work:

All work not turned in on time will have an automatic reduction in value to 50% of its full value. **Work that is not turned in by the next class will NOT be accepted.** Exceptions to this will be as per University Policy concerning absences from class. If you know an assignment will be late for a valid reason, inform your instructor in advance to avoid unnecessary penalty.

Format for Reports:

Each assignment will be arranged such that the reader can easily examine the contents. Any materials that are hard to read or require special handling to get at will not be graded. The cover page must contain the following:

1. **Assignment Title and Chapter Number** (bolded)
2. Your Name: Prepared by Joe Student
3. Course Name and Number
4. The Date
5. Submitted to Mrs. RaeJean Griffin

Your grade will reflect the quality of the presentation/paper.

Tentative Schedule

WEEK 1

COURSE DESCRIPTION AND POLICIES

WELDING OVERVIEW AND SMAW, GMAW, FCAW, AND GTAW

WEEK 2

SAW, PAW, RW, AND ESW, SW, OAW, AND CUTTING
METAL FORMING, METAL FORMING, COLD WORKING CASTING

WEEK 3

MIDTERM/**EXAM 1**
METAL FORMING, METAL FORMING, COLD WORKING

WEEK 4

ABRASIVE MACHINING
NTM

WEEK 5

SURFACE FINISHES & CATCH UP FOR FINAL EXAM REVIEW
FOR FINAL EXAM
FINAL EXAM: July 3rd 2026.

NOTE: Quizzes, assignments, term paper/projects, exams and how to complete submission requirements will be available in the Canvas, so please check your Canvas dashboard, course calendar everyday (if possible) throughout the semester.

Date of Final Exam: July 3, 2026 – Online

Last Date to Withdraw June 24, 2026

Census Date and Policies: Refer to the respective section below.

Technology Access:

This is an online course and will require reliable technology. Required technology includes:

Hardware:

- Desktop or laptop computer with internet access.
- Note: if your internet connection is down, it is your responsibility to seek access to avenue such as UTT computer lab a public library to complete and submit your work on time.
- A camera, microphone and sound speakers.

Software:

- A current operating system (Microsoft or Apple)
- A web browser (Internet Explorer, Chrome, safari, Firefox, etc.)
- Access to Canvas and Patriot mail. Note: Google Chrome does not support JAVA. Do not use it for Soft Chalk lessons.
- Microsoft Office (Available at no charge to student at <https://www.uttyler.edu/it/office365/proplus.php>)
- Note: Do NOT use Google Docs for writing assignments
- Also standard plug-ins such as: Java, Flash, QuickTime, Adobe Reader or another FDF reader such as Preview on the Mac.

- Other software as noted in each module such as EPortfolio

Technical Support:

Technology related problems (e.g., Patriot email, blackboard, access problem to the *myUTTyler* etc.) can often be solved by calling the UT Tyler Information Technology Hotline (903) 565-5555 x2 or by emailing them at itsupport@patriots.uttyler.edu. In your email be sure to include:

- The title and number of the course
- The Canvas page in the question
- A description and message number for any error message that you receive
- What were you doing at the time you got error message

Discrimination:

The policy of this department is to make your college experience as pleasant as possible. However, if at any time you feel that you are being discriminated against, belittled, or not treated appropriately, please notify the instructor either anonymously or in-person immediately after class. It is not the intention of any of the faculty in this department to make your college experience an unpleasant one. Remember, the first step in the process is to inform the instructor so s/he can be made aware of the problem and take corrective action. If the problem continues to persist, please inform the chair of the department. The dean can then be notified if the problem continues to exist after a few days. A grievance can then be filed in the Office of Student Services if there has still been no change in the instructor's behavior. It should be noted that filing a grievance is a serious act and should NOT be done so just because you received a bad grade on an exam or in the course. Communication is an effective tool to solve problems and is rarely used enough. Most people are not deliberately trying to upset you, they are just not aware of your vantage point.

Offensive Language:

Any type of offensive language will not be tolerated in the classroom or laboratory or online. How you speak to your friends outside the classroom is your business, however, when you are in the classroom you must follow the University of Texas rules of conduct. **You will be asked to leave if your language or conduct is offensive.**

Required Activities Scheduled Outside of Regularly-Scheduled Class time (fees, tickets, procedures and/or forms required):

Read textbook, review notes, and complete assignments.

Department Website: <http://www.uttyler.edu/cbt/hrd/tech/>

Commencement:

Holidays: None

UT Tyler Honor Code

Every member of the UT Tyler community joins together to embrace: Honor and integrity that will not allow me to lie, cheat, or steal, nor to accept the actions of those who do.

Student Resources:

Faculty can update student resources to provide additional support appropriate for each course.

Resources to assist you in the course

- [UT Tyler Student Accessibility and Resource \(SAR\) Office](#) (provides needed accommodations to students with document needs related to access and learning)
- [UT Tyler Writing Center](#)
- [The Mathematics Learning Center](#)
- [UT Tyler PASS Tutoring Center](#)
- [UT Tyler Supplemental Instruction](#)
- [Upswing \(24/7 online tutoring\) - covers nearly all undergraduate course areas](#)
- [Knack Tutoring](#) – in-person and virtual options
- [Robert Muntz Library](#) and [Staff/Library Liaisons](#)
- [Canvas 101](#) (learn to use Canvas, proctoring, and other software)
- Digital Support Toolkit (for supported courses only. Students are automatically enrolled in the toolkit for supported courses)
- [The Career Success Center](#)
- [UT Tyler Testing Center](#)
- [Office of Research & Scholarship Design and Data Analysis Lab](#)

Resources available to UT Tyler Students

- [UT Tyler Counseling Center](#) (available to all students)
- [TimelyCare](#) (24/7 access to Student Support Program counseling through phone or chat and online wellness resources available in a variety of languages)
- [Military and Veterans Affairs](#) (supports for our military-affiliated students)
- [UT Tyler Patriot Food Pantry](#)
- [UT Tyler Financial Aid and Scholarships](#)
- [UT Tyler Student Business Services](#) (pay or set up payment plans, etc.)
- [UT Tyler Registrar's Office](#) (academic information, forms library, policies, etc.)
- [Office of International Programs](#)
- [Title IX Reporting](#)
- [Patriots Engage](#) (available to all students. Get engaged at UT Tyler.)

University Policies and Information

Withdrawing from Class

Students may [withdraw](#) (drop) from this course using the [Withdrawal Portal](#). Withdrawing (dropping) this course can impact your Financial Aid, Scholarships, Veteran Benefits, Exemptions, Waivers, International Student Status, housing, and degree progress. Please speak with your instructors, consider your options, speak with your advisor, and visit the One-Stop Service Center (STE 230) or email enroll@uttyler.edu to get a complete review of your student account and the possible impacts to withdrawing. We want you to make an informed decision. UT Tyler faculty and staff are here for you and often can provide additional support options or assistance. Make sure to carefully [read the implications for withdrawing from a course and the instructions](#) on using the [Withdrawal portal](#).

Texas law prohibits students from dropping more than six courses during their entire undergraduate career*. The six courses dropped includes those from other 2-year or 4-year Texas public colleges and universities. Consider the impact withdrawing from this class has on your academic progress and other areas, such as financial implications. We encourage you to consult your advisor(s) and Enrollment Services for additional guidance. **CAUTION #1:** Withdrawing before census day does not mean you get a full refund. Please see

the [Tuition and Fee Refund Schedule](#). **CAUTION #2:** All international students must check with the [Office of International Programs](#) before withdrawing. All international students are required to enroll full-time for fall and spring terms. **CAUTION #3:** All UT Tyler Athletes must check with the Athletic Academic Coordinator before withdrawing from a course. **CAUTION #4:** All veterans or military-affiliated students should consult with [Military and Veterans Affairs](#).

* Students who began college for the first time before 2007 are exempt from this law.

Artificial Intelligence Statement

UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified for this course is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy. *Refer to the About This Course section of the UT Tyler Syllabus Module for specific information on appropriate use of AI in your course(s).*

Final Exam Policy

Final examinations are administered as scheduled. If unusual circumstances require that special arrangements be made for an individual student or class, the Dean of the appropriate college, after consultation with the faculty member involved, may authorize an exception to the schedule. Faculty members must maintain student final examination papers for a minimum of three months following the examination date.

Incomplete Grade Policy

If a student, because of extenuating circumstances, is unable to complete all of the requirements for a course by the end of the semester, then the instructor may recommend an Incomplete (I) for the course. The "I" may be assigned in place of a grade *only when all of the following conditions are met:* (a) the student has been making satisfactory progress in the course; (b) the student is unable to complete all coursework or final exam due to unusual circumstances that are beyond personal control and are acceptable to the instructor, and (c) the student presents these reasons before the time that the final grade roster is due. The semester credit hours for an Incomplete will not be used to calculate the grade point average.

The student and the instructor must submit an Incomplete Form detailing the work required and the time by which the work must be completed to their respective department chair or college dean for approval. The time limit established must not exceed one year. Should the student fail to meet all of the work for the course within the time limit, then the instructor may assign zeros to the unfinished work, compute the course average for the student, and assign the appropriate grade. If a grade has yet to be assigned within one year, then the Incomplete will be changed to an F, or NC. If the course was initially taken under the CR/NC grading basis, this may adversely affect the student's academic standing.

Grade Appeal Policy

Disputes regarding grades must be initiated within sixty (60) days from the date of receiving the final course grade by filing a Grade Appeal Form with the instructor who assigned the grade. A grade appeal should be used when the student thinks the final course grade awarded does not reflect the grades earned on assessments or follow the grading scale as documented in the syllabus. The student should provide the

rationale for the grade appeal and attach supporting document about the grades earned. The form should be sent via email to the faculty member who assigned the grade. The faculty member reviews the rationale and supporting documentation and completes the instruction section of the form. The instructor should return the form to the student, even if a grade change is made at this level. If the student is not satisfied with the decision, the student may appeal in writing to the Chairperson of the department from which the grade was issued. In situations where there is an allegation of capricious grading, discrimination, or unlawful actions, appeals may go beyond the Chairperson to the Dean or the Dean's designee of the college from which the grade was issued, with that decision being final. The Grade Appeal form is found in the [Registrar's Form Library](#).

NOTE: The Grade Appeal Form is different from the Application for Appeal form submitted to the Student Appeals Committee, which does not rule on grade disputes as described in this policy.

Disability/Accessibility Services

In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA), the University of Texas at Tyler offers accommodations to students with learning, physical, and/or psychological disabilities. If you have a disability, including a non-visible diagnosis such as a learning disorder, chronic illness, TBI, PTSD, ADHD, or a history of modifications or accommodations in a previous educational environment, you are encouraged to visit <https://hood.accessiblelearning.com/UTTyler/> and fill out the New Student application. The Student Accessibility and Resources (SAR) office will contact you when your application has been submitted and an appointment with the Assistant Director Student Accessibility and Resources/ADA Coordinator. For more information, including filling out an application for services, please visit the SAR webpage at <https://www.uttyler.edu/disability-services>, the SAR office located in the Robert Muntz Library, LIB 460, email saroffice@uttyler.edu, or call 903.566.7079."

Military and Veterans

UT Tyler honors the service and sacrifices of our military-affiliated and veterans students. If you are a student who is a veteran, on active duty, in the reserves or National Guard, or a military spouse or dependent, please stay in contact with your faculty member if any aspect of your present or prior service or family situation makes it difficult for you to fulfill the requirements of a course or creates disruption in your academic progress. It is important to make your faculty member aware of any complications as far in advance as possible. Your faculty member is willing to work with you and, if needed, put you in contact with university staff who are trained to assist you. The [Military and Veterans Affairs](#) has campus resources for military-affiliated students. The MVSC can be reached at MVSC@uttyler.edu or via phone at 903.565.5972.

Students on an F-1 Visa

To remain in compliance with Federal Regulations requirements you must do the following:

- Traditional face-to-face classes: Attend classes on the regular meeting days/times.
- Hybrid Classes: Attend all face-to-face classes convened by the instructor according to the schedule set for your specific course.
- Online course: Only one online course can count toward your full-time enrollment. Students are expected to be fully engaged and meet all requirements for the online course.

Academic Honesty and Academic Misconduct

The UT Tyler community comes together to pledge that "Honor and integrity will not allow me to lie, cheat, or steal, nor to accept the actions of those who do." Therefore, we enforce the [Student Conduct and Discipline policy](#) in the Student Manual Of Operating Procedures (Section 8).

FERPA

UT Tyler follows the Family Educational Rights and Privacy Act (FERPA) as noted in [UT Tyler's Policy 7.01: Family Educational Rights and Privacy Act](#). The course instructor will follow all requirements to protect your confidential information.

Absence for Official University Events or Activities

This course follows the practices related to [Excused Absences for University Events or Activities](#) as noted in the Catalog.

Absence for Religious Holidays

This course follows the practices related to UT Tyler's [Excused Absence for Religious Holy Days](#) as noted in the Catalog.

Absence for Pregnant Students

This course follows the requirements of Texas Laws SB 412, SB 459, SB 597/HB 1361 to meet the needs of pregnant and parenting students. Part of the supports afforded pregnant students includes excused absences. Faculty who are informed by a student of needing this support should make a referral to the Parenting Student Liaison. NOTE: Students must work with the Parenting Student Liaison in order to receive these supports. Students should reach out to the Parenting Student Liaison at parents@uttyler.edu and also complete the [Pregnant and Parenting Self-Reporting Form](#).

Campus Carry

We respect the right and privacy of students who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at <http://www.uttyler.edu/about/campus-carry/index.php>.

Note: The instructor reserves the right to modify the syllabus. All modifications will be communicated to the students in a timely manner.